KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

TBUS-201
Pop-up Table Connection Bus

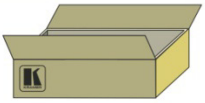
P/N: 2900-300205 Rev 1

TBUS-201 Quick Start Guide

This guide takes you through a basic installation and first-time use of your **TBUS-201**. For more detailed information, see the **TBUS-201** user manual. Download the latest manual at http://www.kramerelectronics.com/support/.

Step 1: Check what's in the box

- **TBUS-201** Pop-up Table Connection Bus
- 2 Table clamps
- 1 Cut out Template
- 1 Quick start guide

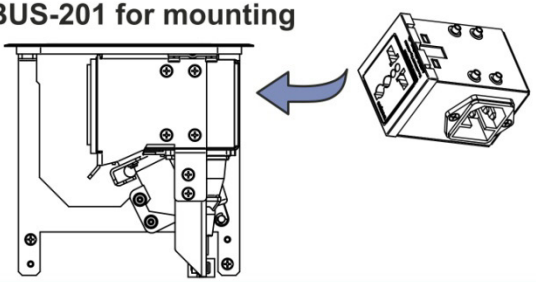


Save the original box and packaging materials in case you need to return your product for service.

Step 2: Prepare the TBUS-201 for mounting

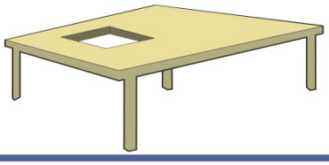
Install the required power socket.

Note that the power socket is purchased separately.



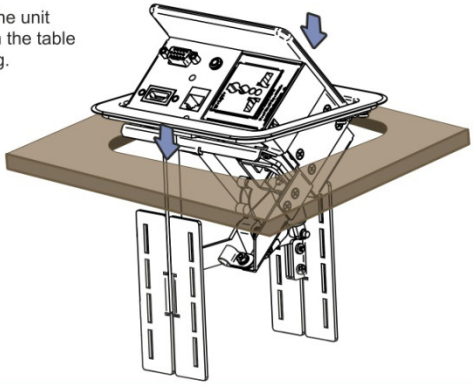
Step 3: Prepare the table for mounting

Cut out an opening in the table using the cut out template.



Step 4: Install the TBUS-201 to the table

Insert the unit through the table opening.



Mount the Brackets, secure the unit to the table and connect the cables.

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Video Products.

Thank you for purchasing the Kramer **TBUS-201** Pop-up Table Connection Bus, which is ideal for boardrooms, conference and training rooms!

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high-performance high-resolution cables

Go to http://www.kramerelectronics.com to check for up-to-date user manuals, a complete list of Kramer wall plates and module connectors, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **TBUS-201** away from moisture, excessive sunlight and dust

Do not place heavy objects on top of the **TBUS-201**.

3 Overview

The **TBUS-201** is a furniture-mounted pop-up connection bus that is easily installed into a table or podium top. The **TBUS-201** interface enables you to connect any equipment to systems installed in a room via the following pass-through connectors:

- 1 PC on a 15-pin HD connector
- 1 HDMI connector
- 1 stereo audio on a 3.5mm connector
- 1 Ethernet RJ-45 connector

When not in use, you can lower the **TBUS-201** flush into the table. The example in Figure 1 shows the **TBUS-201** in a table or podium top with a universal power socket.

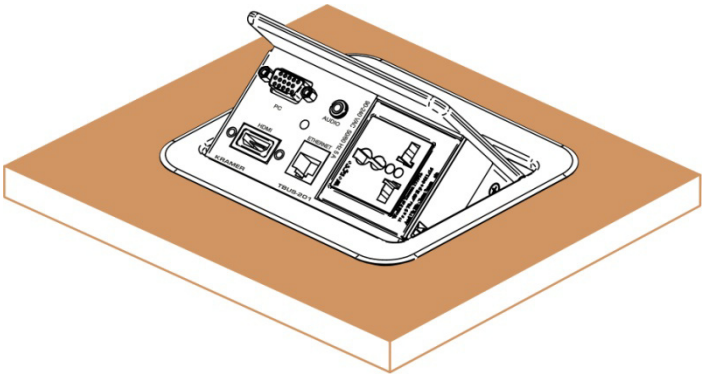

Figure 1: TBUS-201 Pop-up Table Connection Bus

In addition, the **TBUS-201** is:

- Easily opened and closed by pressing down gently on the lid due to its tilting angular construction, pneumatic lift and mechanical latching mechanism. It can be raised (when in use) or lowered (when not in use)
- Suitable for any of the following power sockets: for the USA, the UK, Germany (the Europlug), Belgium-France, Switzerland, Italy, Australia, Brazil, Israel, South Africa or “Universal” for use anywhere (see compatibility restrictions in Section 4.2)

  Order the power sockets separately from Kramer Electronics

3.1 About HDMI—General Description

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital audio/video interface, widely supported in the entertainment and home cinema industry. HDMI ensures an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions. It delivers the maximum high-definition image and sound quality in use today. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

In particular, HDMI:

- Provides a simple interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy cable

  SIMPLICITY - With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced

  LENGTHY CABLE - HDMI technology has been designed to use standard copper cable construction at up to 15m

- Supports standard, enhanced, high-definition video, and multi-channel digital audio on a single cable

  MULTI-CHANNEL DIGITAL AUDIO - HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats

- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements

- Benefits consumers by providing superior, uncompressed digital video quality via a single cable, and user-friendly connector

  HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner

- Is backward-compatible with DVI (Digital Visual Interface)

- Supports CEC, two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play

- Has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p, 2K and 4K), standard definition formats such as NTSC or PAL, as well as 480p and 576p

4 Defining the TBUS-201

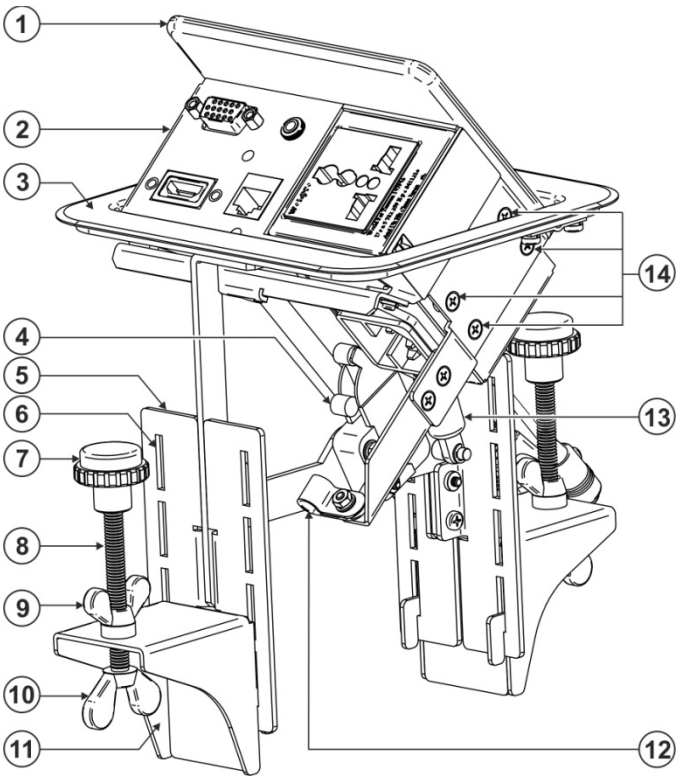

Figure 2: Defining the Parts of the TBUS-201 Pop-up Table Connection Bus

#	Feature	Function
1	Black anodized or brushed aluminum semi-automatic lid	Covers the connecting surface, leaving the table surface neat and tidy
2	Connecting Surface	See Section 4.1
3	Outer Rim	Fits over the table surface
4	Mini Latch	Enables the closing and opening of the lid by slightly pressing it
5	Mounting Bracket Plates	For holding the brackets
6	Mounting Bracket Slits (four sets on each side)	Insert the mounting brackets to the slits when installing the **TBUS-201**
7	Rubber Protectors (2)	To ensure soft tightening to the table underside
8	Mounting Screws (2)	For securing the **TBUS-201** to the table
9	Locking Butterfly Nuts (2)	Tighten to lock the mounting butterfly screw
10	Mounting Butterfly Nuts (2)	Tighten to secure the unit to the table surface

#	Feature	Function
11	Mounting Brackets (2 units)	Place in the bracket slits after inserting the enclosure into the table – for securing the unit to the table surface
12	Power Connector Lock	Secures the power cable so it does not accidently disconnect when opening the lid
13	Pneumatic Piston	Enables automatic lifting and smooth closing of the lid
14	Power Socket Opening Screw Holes (4)	For installing/replacing the power socket

4.1 The TBUS-201 Connecting Surface

Figure 3 defines the connecting surface and includes the universal power socket (sold separately) for illustration purposes only:

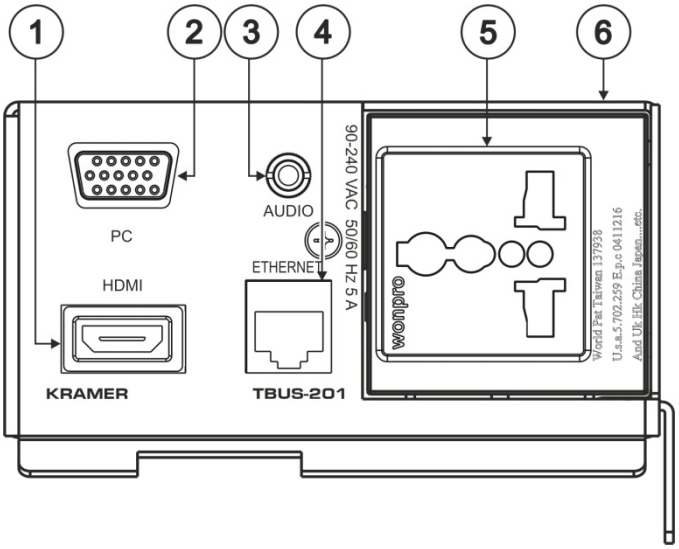

Figure 3: TBUS-201 Connecting Surface

#	Feature	Function
1	*HDMI* Connector	Connect to an HDMI source
2	*PC* 15-pin HD Connector	Connect to a computer graphics source
3	*AUDIO* 3.5mm Mini Jack	Connects to an unbalanced stereo audio source
4	*ETHERNET* Connector	Connects to the PC or other Controller through computer networking
5	Power Socket Opening	Suitable for various power sockets (see Section 4.2)
6	Connecting Surface	Pops up when gently pressing the lid

4.2 Power Socket Options

A choice of power sockets is available for purchase in several versions, including power sockets for the USA, Brazil, Germany (the Europlug), UK, Switzerland, Belgium-France, Italy, South Africa, Israel and Australia. A “Universal” socket for general use is also available (see the compatibility restrictions in the table below). Note that the photos below are for illustration purposes only.

Power Socket Type	Power Specs	Description
Universal:	TS-201U (80-000043) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	**Fully compatible** with power plugs in the UK, India, Italy and Denmark, as well as with the 2-prong Europlug. **Partially compatible** (if the polarity is reversed) with plugs in China, Switzerland, Israel and the USA. The universal socket does not supply grounding to plugs in Central Europe and France and so you should order country specific sockets instead. **Not compatible** with South African plugs.

Power Socket Type	Power Specs	Power Socket Type	Power Specs
USA:	**TS-201US (80-000046)** 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	Italy:	TS-201IT (80-000047) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Germany and EU:	TS-201DE (80-000044) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	Australia:	TS-201AU (80-000050) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Belgium and France:	TS-201FR (80-000045) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	Israel:	TS-201IL (80-000053) 220V AC, 50/60Hz, 5A Maximum 5A per power outlet
South Africa	TS-201ZA (80-000052) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	Brazil	TS-201BR (80-000051) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet
Switzerland	TS-201CH (80-000049) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet	England	TS-201GB (80-000048) 100-240V AC, 50/60Hz, 5A Maximum 5A per power outlet

5 Installing the TBUS-201

To install the **TBUS-201** perform the following steps:

1. Cut an opening in the table (see Section 5.1).
2. Install the power socket (see Section 5.2).
3. Insert the **TBUS-201** through the cut-out opening (see Section 5.3).
4. Connect the cables (see Section 5.4).

5.1 Cutting an Opening

The cardboard cutout template (supplied) defines the surface you have to cut out to install your **TBUS-201**.

The thickness of the table should be 3in (76mm) or less.

Before cutting the opening, confirm the dimensions of the cutout template and make sure that they have not changed.

Mark the area to cut and then cut out the relevant part of the wooden surface in which you want to insert the **TBUS-201**.

Take care not to damage the table. Kramer Electronics is not responsible for any damage caused to the table.

5.2 Installing the Power Socket

Figure 4 shows an example of the Universal power socket housing which is one of the optional power sockets for the **TBUS-201**, see Section 4.2.

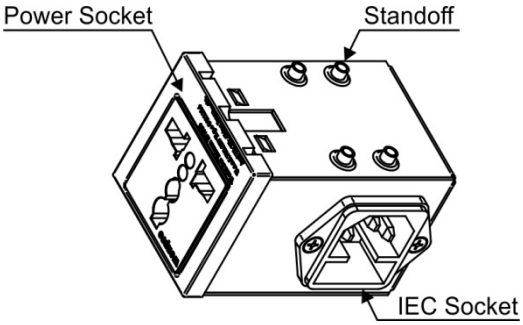

Figure 4: TBUS-201 Universal Power Socket Housing

To install the power socket:

1. Close the **TBUS-201** lid.

2. Carefully insert the power socket housing so that the power socket fits into the power socket opening on the connecting surface and the four standoffs fit the four screw holes on the **TBUS-201**.
   When positioned correctly, the IEC socket faces downwards.

3. Screw the four screws included in the power socket kit into the designated holes to fix the power socket housing in place (see Figure 5).

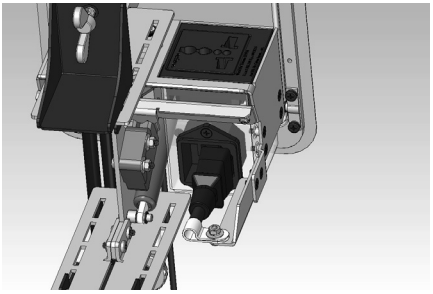

Figure 5: Power socket installed

4. Unscrew the power connector lock.

5. Connect the IEC power cord to the IEC socket.

6. Insert the power cord into the power connector lock and tighten the screw (see Figure 2, item 12) to secure the power cable.

5.3 Inserting the TBUS-201 through the Cut-Out Opening

To install the **TBUS-201**, do the following:

1. Carefully insert the unit into the prepared opening.

2. Take the support brackets under the table and place them into the support bracket grooves at the desired height (on both the front and rear sides of the unit).

3. Make sure that the upper outer rim is situated parallel to the edge of the table.

4. Insert the table securing screw through the holes in the support brackets and tighten them until they reach the table surface (from underneath).

5.4 Connecting the Cables

1. Connect the appropriate cables from underneath.

2. Secure the cables.
   Do not keep the cord too tight or too loose.

Once you have connected the unit to the mains power and connected the proper cables, you may use the unit.

6 Technical Specifications

<table>
<tr><td>PORTS:</td><td colspan="2">1 HDMI connector, 1 Ethernet RJ-45 connector,
1 15-pin HD connector, 1 3.5mm mini jack</td></tr>
<tr><td rowspan="14">POWER SOURCE
(AC power limits):</td><td colspan="2">Power Socket Assemblies</td></tr>
<tr><td>Universal</td><td>100-240V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td colspan="2">Fully compatible with power plugs in the UK, India, Italy and Denmark, as well as with the 2-prong Europlug.
Partially compatible (if the polarity is reversed) with plugs in China, Switzerland, Israel and the USA. The universal socket does not supply grounding to plugs in Central Europe and France (you should order country specific sockets instead).
Not compatible with South African plugs.</td></tr>
<tr><td>USA</td><td>100-240V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Germany and EU</td><td>100-240V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Belgium and France</td><td>100-240V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Italy</td><td>100-240V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Australia</td><td>100-240V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Israel</td><td>220V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>South Africa</td><td>220V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Switzerland</td><td>220V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>England</td><td>220V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>Brazil</td><td>220V AC, 50/60Hz, 5A
Maximum 5A per power outlet</td></tr>
<tr><td>FUSE RATING:</td><td colspan="2">T 6.3A 250V</td></tr>
<tr><td>OPERATING TEMPERATURE RANGE:</td><td colspan="2">+5 to +45 Deg. Centigrade</td></tr>
<tr><td>OPERATING HUMIDITY RANGE:</td><td colspan="2">10 to 90% RHL, non-condensing</td></tr>
<tr><td>STORAGE TEMPERATURE RANGE:</td><td colspan="2">-20 to +70Deg. C.</td></tr>
<tr><td>STORAGE HUMIDITY RANGE:</td><td colspan="2">5 to 95% RHL, non-condensing</td></tr>
<tr><td>DIMENSIONS:</td><td colspan="2">Including the outer rim: 14.5cm x 13.2cm x 17.3cm (5.71" x 5.2" x 6.81") W, D, H
Without the outer rim: 13.3cm x 12.0cm x 17.3cm (5.24" x 4.72" x 6.81") W, D, H</td></tr>
<tr><td>WEIGHT:</td><td colspan="2">0.85kg (1.87lbs) approx.
1.2kg (2.65lbs) approx. with mounting brackets</td></tr>
<tr><td>ACCESSORIES:</td><td colspan="2">Cardboard template</td></tr>
<tr><td>OPTIONS:</td><td colspan="2">Power socket kits, power cord</td></tr>
<tr><td colspan="3">Specifications are subject to change without notice at http://www.kramerelectronics.com</td></tr>
</table>

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A “CONSUMER PRODUCT” UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.

For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.
Web site: www.kramerelectronics.com
E-mail: info@kramerel.com

SAFETY WARNING
Disconnect the unit from the power supply before opening and servicing

P/N: 2900-300205 Rev: 1